

CONCEPTUALIZATION OF PROJECT MANAGEMENT OFFICES STRUCTURES

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ABSTRACT

Project management is becoming an asset to a considerable amount of organizations in their everyday routine. When the importance of PM grows, the challenges that an organization has to face also raise, and the need of an effective answer becomes essential. The Project Management Office (PMO) is an entity which aims to facilitate project management, to solve its main challenges and to optimize its best practices within the organization. However, to decide which specific functions and in what context should an organization implement a PMO remains a major challenge for most organizations. Therefore, this paper suggests different PMOs typologies, designed to perceive PMOs like an evolutionary structure. The PMOs are conceptualized as models through the roles they play, taking into account the level of integration within the organization.

INTRODUCTION

Project management has increased its importance, both in the academic community and in the business world, being regarded as a very advantageous and interesting tool (Mir & Pinnington, 2014). However, its quantitative value remains difficult to prove. Project management implies the application of knowledge, skills, tools and techniques to the project activities, in order to achieve its goals (PMBok, 2013). However, achieving effective project management remains a challenge. For an organization to generate value with the investment in projects at an optimal level, it must foresee a clear connection between projects outputs and the requirements of the business strategy for the company (Too & Weaver, 2014). That is why many company groups choose to transform their organizations into project oriented organizations. According to Jalal and Koosha (2015), applying project management knowledge by project oriented organizations is inevitable in order to obtain an optimal resource use and to increase productivity.

The purpose of organizational project management goes beyond the simple project delivery on schedule, budget and technical quality requirements. The purpose is to add value for the business (Aubry, Hobbs, & Thuillier, 2007). The organizations that understand this, are the ones which realize the true nature of project management and which, therefore, maximize its value. Hereupon, these are the companies which will realize the true, and the real value of the work carried out.

This paper aims to present the results of a literature review of the functions and characteristics that a PMO should implement in each organization, taking into account their different contexts and specificities. Since most of the organizations fail in the implementation of a PMO because they lack of a clear idea of the right PMO for them, therefore this study contributes to support future research developing implementation guidelines for organizations during this process.

LITERATURE REVIEW

Project Management Offices

The pursue of strategic goals regards a greater and greater importance to projects (Aubry et al., 2007). It is clear that project management has been increasing its importance within the organizations management. Many organizations have implemented a new organizational entity, commonly known as Project Management Office (PMO), owing to the answer to new challenges and as a way to foresee mechanisms to increase the number and strategic importance of projects (Hobbs, Aubry, & Thuillier, 2008).

The origin of PMOs dates from mid-nineties and their numbers has increased significantly since (Pellegrinelli & Garagna, 2009). The increasing importance of a PMO is directly connected to the increasing number and complexity of projects throughout the whole business world and also to the attempts to improve the efficiency, through means of centralization of support and control of the projects (Cunha & Moura, 2014).

The implementation of a PMO may strengthen and stimulate the professionalism in project management (Dai & Wells, 2004). A PMO may result from a deeply rooted project management policy. This means that it may be the result of an evolution from a simple organization into a project oriented organization. This

may serve as complement for the project management and to increase its efficiency within the company. However, this office may also work as a transition and help the company in evolving for a whole ideology in project management. A PMO stands as an innovative organization, which may not only improve the project management practices, but also facilitate the transformation of the company (Singh, Keil, & Kasi, 2009).

It is important, however, to come up with a definition which may match the previous concept. PMO is a management structure which patterns project related governance processes, thus facilitating resource, methodology, tool and technique sharing. The PMO may provide support to project management and, furthermore, be responsible for the direct management of one or more projects (PMBok, 2013). The complexity and variety of the PMOs has led to a multiplicity of interpretations what a real PMO is and what it must, in fact, be (Pemsel & Wiewiora, 2013). Besides, all the definitions have a common characteristic, support project management and increase their efficiency.

PMO – Implementation

The characteristics and types of PMOs which we have implemented must be accordingly with the purposes of a company and have to be drawn according to the functions expected. The people in charge of the implementation or management of a PMO have a great variety of options to choose and those options go from the organizational structure to be implemented to the functions it will support (Aubry, Müller, Hobbs, & Blomquist, 2010). Owing to the different structural and contextual dimensions of each organization, different structural and functional PMOs are expectable. This concept is essential in order to achieve efficient PMOs (Jalal & Koosha, 2015).

The difficulty in implementing a PMO is based on the great variety of PMOs and in the lack of a consensus regarding its value. Instead of a company imitating another, they should be aware of the clear perception of the phenomenon to be imitated (Hobbs et al., 2008). That is why there is a considerable amount of unsuccessful PMOs implementation, with the consequent barriers emerging to the perception of the benefits of project management. The efficiency and success of a PMO depends of: choosing the functions to be implemented and adapting them to the organization's needs (Hurt & Thomas, 2009).

Desouza and Evaristo (2006) concluded that in the latest years organizations have implemented the PMOs in order to help decreasing the risks which projects face. Projects are constantly at risk of not fulfilling the foreseen deadlines, regarding budget, timing, quality, expectation management, etc. A well implemented PMO is able to solve the most challenging project management problems, through the knowledge catchment and transfer, helping maximize the power of the multifunctional

teams, regulating the demand for integrated technology, etc. Besides, it can clearly evaluate the impact and the risks of change and it can also provide orientations about the best practices and standards to projects (Desouza & Evaristo, 2006).

PMOs stand as an answer of organizations for their needs and environments (Pellegrinelli & Garagna, 2009). The difficulty is in understanding what the needs that the PMO will respond and how it will be incorporated into the corporate culture. It is, therefore, essential to study the importance of a PMO implementation, this may imply the success or failure of that project. That is why many authors have gathered the factors to be considered in the successful implementation of a PMO. The implementation of a PMO is a difficult challenge for most companies (Singh et al., 2009).

According to Hurt and Thomas (2009), the implementation of a PMO must be extremely careful. A long term central ideology must be created. So, it is important to choose the right leader, together with the right team for a PMO, to create a culture of discipline and face the most difficult challenges, but never lose faith.

In spite of defining a clear goal for the implementation of a PMO, Andersen, Henriksen, and Aarseth (2007) also consider other factors, such as: to identify a person responsible for the conduction of the implementation, to plan a gradual evolution of a PMO, to fill in the team of a PMO with the adequate number of people and skills and to formally start the PMO.

Last, but not least, Pellegrinelli and Garagna (2009) state their concerns through questions. Which is the nature of the business? What is the role of projects and programs in the quest of their goals of business? How mature is the organization, people and processes? What is the organization trying to aim when the PMO structure is implemented? Is it important to know the answers to all these questions when implementing a PMO?

The implementation of a PMO is a careful process that must take into account all the factors that may interfere on its performance. A organization will profit from the time and effort spent in defining the correct PMO model which has to be in accordance to the corporate culture and goals foreseen (Desouza & Evaristo, 2006).

FINDINGS AND DISCUSSIONS

After choosing the central ideology, one must put in practice the values and tools that will hold it. Both the PMO and the organization must adapt to the needed changes (Hurt & Thomas, 2009). PMOs are quite heterogeneous – they vary in size, mandate, functions, etc. (Müller, Glückler, & Aubry, 2013). Roles and functions may be of several configurations, established in a way to make sure that the transmission of knowledge and the fulfillment of goals and actions to reach deadlines are achieved (Aubry et al., 2007). As we have seen so far, each organization must weigh the role that its PMO will perform and adapt their functions to the needs planned for the PMO to give answers to.

When a PMO is implemented, there is a need to adapt its characteristics, roles and functions to the organizational and strategic context, so as to increase the performance of projects and match the different expectations (Cunha & Moura, 2014). The challenge for the organizations lies in conciliate the internal management of projects to the governmental structure, in order to align the strategic goals of the company with the project management (Too & Weaver, 2014).

After gathering from the literature the main functions and roles that the PMOs may execute, we decide to typify these in three levels/ models: 'Basic', 'Intermediate' and 'Advanced' (see Table 1). However, the goal is not to implement a single PMO level, but to implement it gradually, in which the basics of a PMO may be first implemented, and through a constant project management improvement within the organization and within the PMO, it is expect to reach the level in which the PMO may perform an advanced role inside the organization.

The PMOs were formerly created to capture and spread good project management practices, as well as the knowledge of those projects throughout the organization. The continuing of the implementation has led to broaden the environment of its activity, including from then the analysis, communication and support in decision making

(Desouza & Evaristo, 2006). However, it is important to highlight that the typology is not restrictive, but only allows the association between a kind of PMO with its capacities (Müller et al., 2013).

The assignment of the functions to the different PMO models take into account the level of liability of each function and the level of implementation of project management practices within the organization. As thus, in a 'Basic' PMO the functions performed have less liability and the organization can have a lack of project management tools implemented, while in an advanced PMO the opposite occurs. Table 1 summarizes the functions by PMO model, indicating as well, the bibliographic references that mentioned the particular PMO function identified.

Models of PMOs, roles and functions

Basic PMO

The 'Basic' PMO will perform a secondary role in the organization and will have no intervention in the projects. The first function given to this PMO consists of helping the organization in performing the transition to an effective project environment.

Table 1: PMO Models (Continuation)

PMO Models	Functions	References
Basic	Leading the organizational transition to an effective project environment	(Dai & Wells, 2004; Kwak & Dai, 2000)
	Knowledge management <ul style="list-style-type: none"> • Transferring Knowledge • Increase the knowledge about previous projects • Developing and maintaining project historical archives • Repository of lessons learned 	(Dai & Wells, 2004; Desouza & Evaristo, 2006; Pellegrinelli & Garagna, 2009; Pemsel & Wiewiora, 2013)
	Standardize best practices	(Desouza & Evaristo, 2006)
	Provide well-trained project manager (through training, workshops and seminars)	(Artto, Kulvik, Poskela, & Turkulainen, 2011; Dai & Wells, 2004; Desouza & Evaristo, 2006; Kwak & Dai, 2000; Singh et al., 2009)
	Informal social interaction	(Pemsel & Wiewiora, 2013)
Intermediate	Develop skills and methodologies (Methods, Standards and tools)	(Cunha & Moura, 2014; Desouza & Evaristo, 2006; Kwak & Dai, 2000)
	Initiate a knowledge platform <ul style="list-style-type: none"> • Ensure that new projects are applying lessons learned • Post – Project Evaluation 	(Dai & Wells, 2004; Kwak & Dai, 2000; Müller et al., 2013; Pemsel & Wiewiora, 2013; Singh et al., 2009)
	Provides project management consulting and mentoring periodically	(Kwak & Dai, 2000)
	Monitor and control project performance	(Cunha & Moura, 2014)
	Risk Management (identifying risks and potential issues)	(Dai & Wells, 2004; Desouza & Evaristo, 2006; Kwak & Dai, 2000)
	Evaluations, analyze and projects prioritization	(Artto et al., 2011)
	Support the projects	(Cunha & Moura, 2014; Kwak & Dai, 2000)
	Collating, summarising and reporting on the progress of projects	(Pellegrinelli & Garagna, 2009)
	Supervision role inside the organization	(Pellegrinelli & Garagna, 2009; Singh et al., 2009)
	Human resources management <ul style="list-style-type: none"> • Balancing competencies • Ensure the cohesion of the team with the project manager 	(Dai & Wells, 2004; Müller et al., 2013; Pemsel & Wiewiora, 2013)

Table 1: PMO Models

PMO Models	Functions	References
Advanced	Ensure that projects are aligned with strategic objectives of the organization	(Cunha & Moura, 2014; Desouza & Evaristo, 2006)
	Control and Quality assurance	(Pemsel & Wiewiora, 2013)
	Financial Management <ul style="list-style-type: none"> • Monitor and control of projects costs and schedule • Providing project administrative support 	(Artto et al., 2011; Pemsel & Wiewiora, 2013)
	Provide interpretative assessments	(Cunha & Moura, 2014)
	Project portfolio management (management of multi-projects)	(Cunha & Moura, 2014; Desouza & Evaristo, 2006)
	Management of the customers' needs	(Müller et al., 2013)

avoid the temptation of using entities like a PMO before the culture of project management may be well achieved (Singh et al., 2009). And this is so because the company must be aware that if a company in the process of implementing a PMO does not have a well installed environment within the project management, it will not be able to understand the real value of a PMO and it will surely devalue the interest for the evolution and the performance of the PMO. The companies that have reported that the development of project management was considered within the company's strategy and vision, have concluded that the supporting role of the PMO was greater. In fact, when developing strong relationships between the strategy and the project management development, the development and improvement of the PMO is much easier to justify (Jalal & Koosha, 2015).

Another function is the knowledge management. This is unanimously regarded as being one of the most important functions within any PMO. It consists of acquiring the knowledge, which is the main advantage within the implementation of a PMO.

The PMO is able to play the role of establishing a bridge between the organization and the barriers to knowledge management. The PMO may promote individual and group learning through the supply of a structure of network knowledge, which will strengthen the effective knowledge, through sharing expert knowledge with individual perspectives, group perspectives and company perspectives (Pemsel & Wiewiora, 2013). Desouza and Evaristo (2006) have considered that one of the main reasons for the projects to fail is the knowledge mismanagement.

The knowledge management will enlarge functions as the transfer of knowledge and will have to increase the knowledge of previous projects, will develop and manage files with the information of the projects and create a repository of lessons learned. None of these functions can be disseminated, all complement each other and end up using the same resources and have very similar results.

The knowledge transfer will fill a remaining gap which consists of taking advantages of former produced knowledge. Many organizations tend to repeat, too often, the same mistakes, as far as the knowledge transfer and the use of former projects information (Desouza & Evaristo, 2006). The knowledge will be stored throughout the project and it may be hopelessly lost if it

is not shared with other projects and with the head organization. This risk constitutes a serious problem for the organizations oriented by projects. It is well known that the knowledge and learning transfer within projects and even with external projects or with the head company occurs with a certain level of difficulty (Pemsel & Wiewiora, 2013).

The implementation of a PMO must increase the knowledge acquiring about failed projects, as well as, the knowledge of successful ones (Dai & Wells, 2004). By increasing the knowledge about former projects, the identification of patterns and information reuse will be useful for more than one project.

The development and management of databases with information gathered from other projects is a function which will ensure that the information previously collected will have a safe place to be stored and analyzed and will ensure that it will not be wasted. The PMO may provide a centralized database to systematically collect and store the knowledge acquired by the project (Dai & Wells, 2004).

The result of all the other stages and of the knowledge management itself is to create a repository of lessons learned. This function used to be given to project managers, who did not have the time or motivation to produce and store the information from lessons learned in order to be used in future projects (Pemsel & Wiewiora, 2013).

When we face a company oriented by projects and the knowledge management is assured, it is important to capture and broaden the good practices within project management. None of the functions is an isolated task. The knowledge management is constant. But when these two features are a part of the PMO routine, it will flow naturally.

The project managers expect the PMO to provide an active support, as far as the best practices for work procedures are concerned, through the improvement of cooperation and integration between project managers (Pemsel & Wiewiora, 2013).

The training is supposed to be made available in order to improve the individual skills and to encourage the management project certification (Kwak & Dai, 2000). In this 'Basic PMO, the training, the workshops and the seminars will help to complement the broadcast of the good practices and will also help to increase the project

management culture. As this function has no intervention whatsoever in project management, it can be developed in this early stage, being expected that the organization is using the same language and communication code. As far as the project management is concerned, it is also expected that it may proceed in the same forward direction.

It is important to provide training to project managers, and not only to project teams. Senior and more experienced project managers within a company are a good mechanism for a PMO to use. This means that the PMO will favor the most experienced staff in their teams (Jalal & Koosha, 2015).

The last function of the PMO to be mentioned is the formal and informal social interaction. This implies the need to further sharing of effective knowledge between projects and between projects and the organization (Pemsel & Wiewiora, 2013).

It is important to highlight that the evolution for an 'Intermediate' PMO does not imply putting the 'Basic' PMO tasks aside, simply because the PMO has consistent basis which will allow us to shelter more functions and to support a higher level of responsibility.

Intermediate PMO

The intermediate PMO may intervene in projects with a certain level of authority.

The first function of this PMO typology, deriving from the former work, i.e., it is to develop skills and methodologies and these will be achieved through the definition of project processes and procedures standardized. The development of standardized project management processes in order to boost the best practices will ensure that people within the organization (and not only project managers) speak the same language (Dai & Wells, 2004). Project managers expect the PMO to provide some sort of organizational support, coordination support and reports about procedural knowledge: how to act within a project and how to follow the management processes of project management (Pemsel & Wiewiora, 2013).

When the processes, methods, rules and tools of the PMO are put in action and when these start getting involved in the routine and processes of the organization, the value transfer for the rest of the organization is guaranteed (Pellegrinelli & Garagna, 2009).

One of the functions that were assign to this PMO is the construction of a platform of knowledge. This function aims to play the role of strengthening the work developed within the knowledge management. The creation of a knowledge platform can be used by the PMO and by project managers in order to complete some process or tool still incomplete (Müller et al., 2013).

A knowledge platform will enable us to guarantee (or, at least, to increase the incentive) to look for information from the lessons learned. It is easier to provide post-project evaluations when the register of former activities is assured. This is a good tool for the PMO to provide consulting and mentoring. Through the knowledge of a

project manager, the development and planning of a project is provided (Dai & Wells, 2004).

At this stage, the PMO is able to provide periodic consulting when consulted. It is at the moment of monitoring and controlling the performance of the project that the PMO starts the intervention in the projects, for the information possessed and its representativity is more than able to influence the direction of projects.

Having in mind the work produced so far, the PMO will be able to carry out the risk management. It will be able to identify the risks and the main problems, to perform evaluations, to analyze and prioritize projects, to support the projects, to cut, to sum up and to report results. It will perform a supervision role inside the organization and it will be able to provide information about the development of projects.

To support the projects means to focus on the resolution of the financial expenses by the project managers, as reporting and software operations (Kwak & Dai, 2000).

The last function of this PMO is the human resources management. The human resources management is vital for the success of the projects. To build relations and face to face interactions are features needed to build trust, in order to understand the level of honesty and to share knowledge (Pemsel & Wiewiora, 2013). The management of the human resources will align the skills of every person with the needs of every project. The support may be provided as matching the right person to the management of a certain project (Dai & Wells, 2004). The implementation of this PMO typology is a huge challenge for the most part of the organizations. It implies a project management culture well sustained and a receptive to changes organization, as far as the work routines are concerned.

Advanced PMO

The implementation of this PMO is a sign that the organization has been able to extract added value from the PMO and for the organization the PMO is a vital support to organizational project management. This PMO has total influence in the choice of the projects, as far as its administrative management is concerned. This means that it will take full charge for all the failed projects, as well.

The main change for this PMO is that it will consider the strategy of the company within its performance range. At this level the organization is able to reach the maximum purpose that a PMO can reach. A PMO must not be considered as an isolated island within the organization. A PMO is a part of a complex network, which connects strategy, projects and structures (Aubry et al., 2007). This function will be able to guarantee that the projects are aligned with the company strategy. To align the needs of a project with the ones of the company is the result of considering the strategy in our mission.

When the PMOs play the role of control and quality assurance, the organizations feel safer and more

confident with the result of the project (Pemsel & Wiewiora, 2013).

The financial management of the project is one of the functions only assumed in this last level. In this level the PMO will be able to monitor the cost and schedule of the projects, as well as to provide administrative support. The administrative demands and requirements increase in proportion to the increasing number of projects (Dai & Wells, 2004).

After developing all these competences, the PMO will be able to provide interpretative assessments about the projects and at this stage the PMO will be responsible for the project portfolio management, because its team will have the required information and competences for such task. The knowledge will flow naturally and the results of the projects will always add value to the company.

The last function attributed to the PMO is the management of the customers' needs. This is one of the main characteristics of project management. However, few PMOs consider it, probably because the management of the customers' expectations stands out as the most complex and least explored.

CONCLUSIONS AND FURTHER RESEARCH

The previous considered typologies mentioned in the literature tend to perceive the different PMOs as independent structures with no relation established between them. As thus, they tend to take out of account all the functions that characterized the diverse forms of PMOs. Therefore, one of the advantages of this study is to expose that the purpose is not to implement only one PMO typology, but to carry out a gradual implementation of PMOs functions. An organization is supposed to focus on the level which answers best to their needs and may even shelter functions from other levels, without this being a risk or an obstacle to the PMO.

However, it is crucial to acknowledge that there were encountered a few constraints during this study. The fact that there are no data available to support the typology presented, made it very difficult to prove the efficiency of it and also, since all of the functions of the PMOs used in this study were withdrawn from similar studies, the functions collected are quite limited and biased.

Since this is an ongoing study, the next research phase will consist in explore other PMO functions that are not taken into account in the literature, such as benefits management.

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